Editorial

1D Nanomaterials: Synthesis, Properties, and Applications

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One-dimensional (1D) nanostructured materials, including nanotubes, nanofibers, and nanowires, have attracted much attention due to their interesting properties and wide range of potential applications. Considerable research has been conducted on new routes to controllable synthesis of 1D nanomaterials. The unique properties of as-obtained 1D nanomaterials can lead to applications in various fields such as electronics, magnetism, optics, and catalysis. Therefore, researchers working in the 1D nanomaterials are constantly striving to develop new fundamental science as well as potential applications. The importance of a platform that allows active researchers in this field to present their new development in a timely and efficient manner is, therefore, necessary.

This special issue focuses on the recent progress in production techniques, novel properties, and applications of various 1D nanomaterials including oxides/metals/nitrides with 1D nanostructures, carbon nanotubes, and nanofibers.

A total of 11 articles are presented in the current issue and they are all research papers. They involve spin transport properties of AlN nanowires, photoluminescence of ZnO nanorods, heating efficiency of iron nanowires, optical properties and thermal stability of poly(vinyl alcohol) composite nanofibers, electrical properties of half-doped manganite single nanowire, carbon nanotube yarns, and pristine and functional single-wall carbon nanotubes. Production techniques include a hydrothermal reaction, reducing method, chemical vapor deposition, spinning method, and microemulsion system. Carbon nanotubes have attracted most research interest, maintaining their comfortable leading positions.

We are pleased to see the progress in synthesis and properties of 1D nanomaterials. We hope that this special issue will promote further development of large-scale economically feasible 1D nanomaterial-making technologies and also contribute to their wide use.

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